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193208 MLRS MISSILE NUMBER FV3-13 FV3-15 FV3-2 ROUND
NUMBER 461/AT2-31 46... (U) ARMY ELECTRONICS RESEARCH AND
DEVELOPMENT COMMAND WSMR NM ATM... D C KELLER 07 JUL 83
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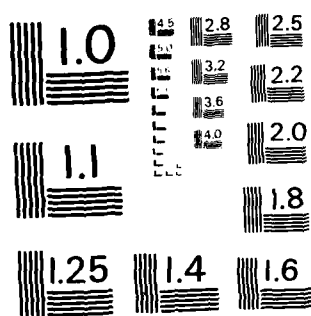
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METEOROLOGICAL DATA REPORT

19320B MLRS

Missile Number FV3-13, FV3-15, FV3-2

Round Number 461/AT2-31, 462/AT2-32, 463/AT2-33

7 July 1983

by

DONALD C. KELLER

Program Support Coordinator

Phone Number (505) 679-9568

AVN Number 349-9568

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19320B MLRS, Missile Number FV3-18, FV3-15, FV3-2, Round Number 461/AT2-31, 462/AT2-32, 463/AT2-33 are presented in tabular form.		

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INTRODUCTION

19320B MLRS, Missile Numbers FV3-18, FV3-15 and FV3-2, Round Numbers 461/AT2-31 462/AT2-32 and 463/AT2-33, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1302:27, 1302:36 and 1302:41 MDT, 7Jul 83. The scheduled launch times were 1300, 1300:04.5 and 1300:09 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 Minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from Pilot-balloon observations at:

SITE AND ALTITUDE

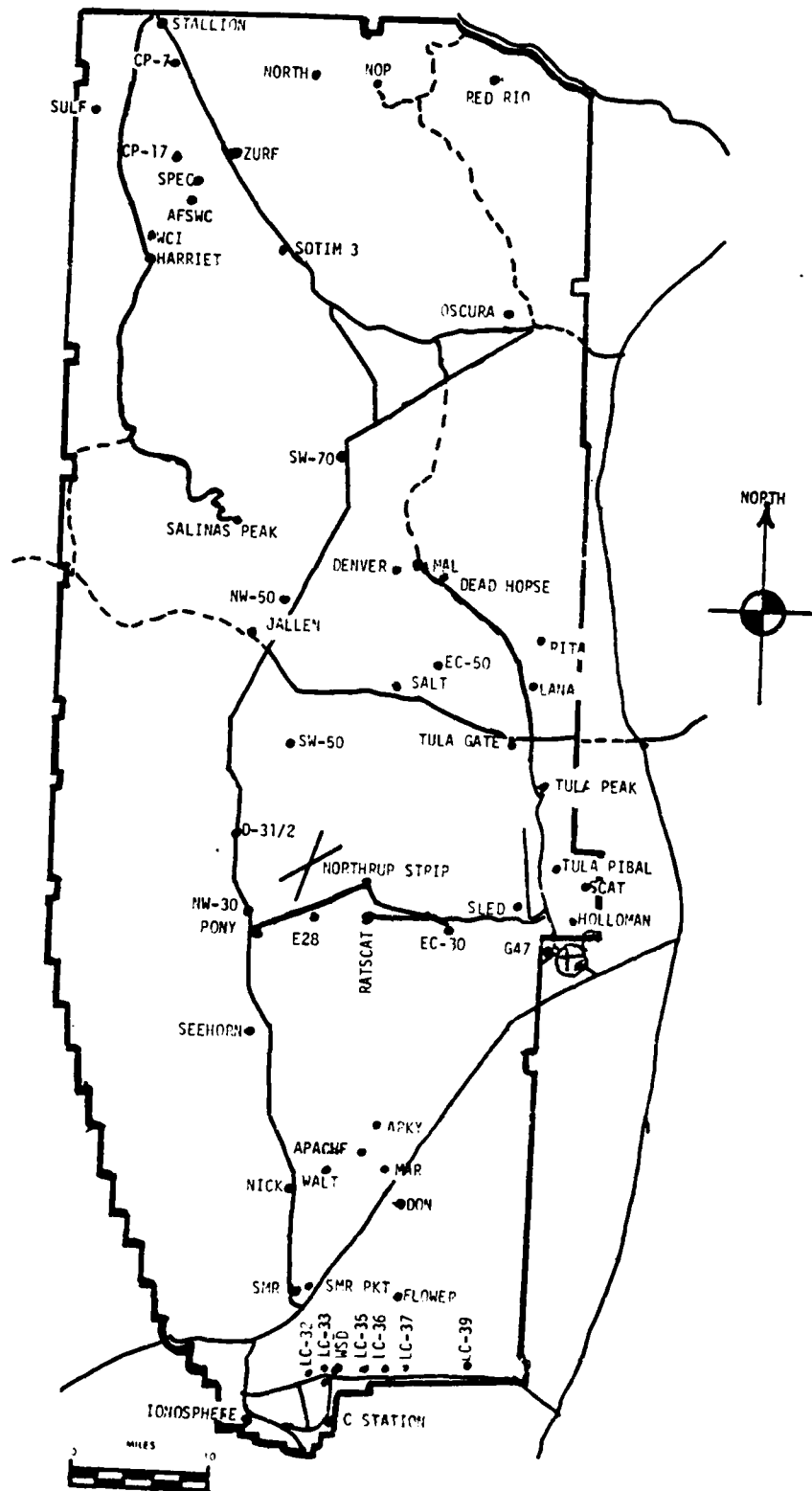
LC-33	2 km
SMR	2 km

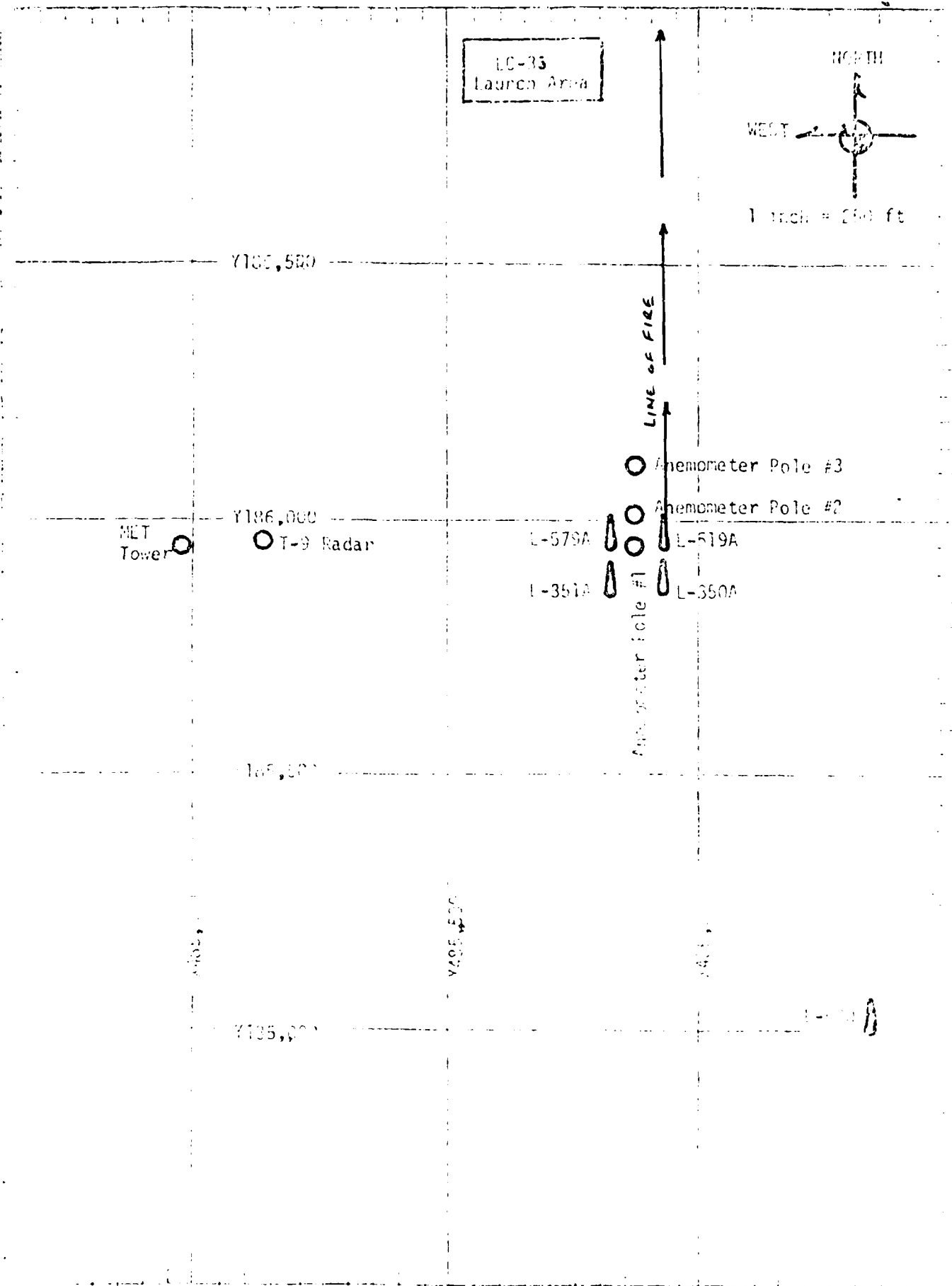
(2) Air structure data (rawinsonde) were collected at the following Met Sites.

SITE AND TIME

LC-37	1030 MDT
WSD	1100 MDT
WSD	1300 MDT

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE 1									
STATION LC-33									
DATE 07		Jul		83		X= 484.982.64		Y= 185.957.73 H= 3995.00	
TIME		PRESSURE		TEMPERATURE		DEW POINT		RELATIVE HUMIDITY	
M D L		mbs		OF °C		OF °C		%	
1302		883.5		35.6		14.5		29	

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	AMT	TYPE	AMT	TYPE	
	6	CU	6500				

PSYCHROMETRIC COMPUTATION

TIME: MDT	1302	
DRY BULB TEMP.	35.6	
WET BULB TEMP.	21.0	
WET BULB DEPR.	14.6	
DEW POINT	14.5	
RELATIVE HUMID.	29	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.29 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	145	04	T -30	139	00	T -30	132	05
T -20	145	04	T -20	153	00	T -20	147	05
T -10	145	06	T -10	135	01	T -10	170	06
T 0.0	145	10	T 0.0	153	06	T 0.0	170	09
T +10	145	10	T +10	139	06	T +10	162	07

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	MISG	MISG	T -30	177	05
T -20	MISG	MISG	T -20	156	04
T -10	MISG	MISG	T -10	144	04
T 0.0	MISG	MISG	T 0.0	138	04
T +10	MISG	MISG	T +10	149	05

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	162	05	T -30	171	05
T -20	149	04	T -20	163	05
T -10	145	04	T -10	164	04
T 0.0	147	04	T 0.0	162	04
T +10	143	04	T +10	162	05

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 07 July 1983

SITE: LC-33

TIME: 1302 MDT

WSTM COORDINATES:

X= 484,837.34

Y= 184,124.44

H= 3,975.57

SITE: SMR

TIME 1304 MDT

WSTM COORDINATES:

X= 472,441.28

Y= 214,137.54

H= 3,999.00

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		CALM
150	122	06
210	120	07
270	116	07
330	113	08
390	110	08
500	114	09
650	126	10
800	128	09
950	119	08
1150	121	10
1350	121	10
1550	129	09
1750	135	10
2000	134	09

Data obtained from a Double Theodolite Tracked
pilot-balloon observation.

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPD K
SURFACE	140	0
150	147	08
210	148	07
270	170	08
330	146	08
390	148	11
500	155	15
650	155	13
800	158	10
950	155	10
1150	148	09
1350	127	05
1550	145	05
1750	146	07
2000	147	07

Data obtained from a RPTS T-9
Radar Tracked pilot-balloon observation.

AIMING AND T-TIME COMPUTER MET MESSAGES
07 July 1982

LC-37 1030 MDT
METCM1324063
071650124884
00196003 30300884
01277004 30100874
02280008 29830850
03246012 29470811
04234011 29030765
05244010 28580721
06190011 28140679
07275006 27910639
08332003 27700601
09265011 27380565
10286016 27100531
11269022 26800498
12266030 26340453

WSD 1100 MDT
METCM1324064
071700122884
00231002 30490884
01286006 30220874
02230006 29930850
03258009 29520812
04238012 29020766
05233010 28580722
06190010 28180680
07247005 27880640
08301005 27640602
09269008 27380565
10275094 27100531
11269019 26800499
12270027 26360453

WSD 1300 MDT
METCM1324064
071900122883
00231005 30720883
01252009 30520874
02241007 30070849
03250009 29590811
04255005 29120766
05237008 28690722
06233004 28270630
07228006 27850640
08241004 27540602
09280008 27340565
10281012 27020531
11261020 26690498
12267028 26250452

GEODETIC COORDINATES
37.40175 LAT DEG
106.31232 LON DEG

SIGNIFICANT LEVEL DATA

19671000Z

LL-37

TABLE 6

STATION ALTITUDE 4051.7 FEET MSL
7 JULY 93 1030 MDT
ASCENSION NO. 97

PRESSURE	GEOMETRIC ALTITUDE MILLIBARS	FEET	TEMPERATURE		REL. HUM. PERCENT
			AIR DEGREES	DEWPOINT CENTIGRADE	
864.1	4051.4		27.7	13.3	41.0
877.7	4262.4		26.1	12.5	43.0
890.0	5186.0		23.3	11.7	48.0
775.1	7051.0		18.4	10.3	52.0
764.6	8184.6		15.5	8.7	64.0
715.7	10013.9		10.3	7.7	84.0
700.0	10221.1		9.1	7.7	91.0
674.2	11242.0		5.5	6.0	95.0
672.9	11292.0		6.1	1.4	74.0
665.4	11994.9		7.1	-2.6	50.0
627.5	13148.4		4.3	.1	74.0
627.3	13581.1		5.0	-6.2	44.0
594.9	15003.5		2.9	-5.6	53.0
588.6	16276.9		.2	-9.8	47.0
559.8	16676.6		-3	-11.3	43.0
551.2	17015.5		-1.1	-9.0	55.0
508.5	19118.8		-4.4	-16.6	32.0
500.0	19554.9		-5.4	-15.4	45.0
492.7	19934.3		-5.9	-21.8	27.0
476.5	20792.7		-7.7	-29.1	16.0
468.7	21214.6		-8.1	-29.4	16.0
445.1	22526.8		-10.4	-30.1	18.0
430.0	25201.6		-16.9	-35.0	19.0

STATION ALTITUDE 4051.17 FEET MSL
7 JULY 83
ASCENSION NO. 97

UPPER AIR DATA
1030100097
10-37

GEODETIC COORDINATES
3.640175 LAT DEG
106.11232 LON DEG

1030 MDT

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMP POINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
4051.4	684.1	77.7	13.3	41.0	1017.1	677.9	110.0	2.5	1.000291
4500.0	670.5	75.4	12.3	44.3	1009.5	675.2	139.5	4.4	1.000280
5000.0	655.5	73.7	11.9	47.0	997.3	673.5	153.7	6.7	1.000282
5500.0	640.7	72.5	11.5	49.8	984.6	671.9	157.6	9.2	1.000278
6000.0	626.1	71.2	11.2	52.8	971.8	670.4	144.0	11.7	1.000275
6500.0	611.7	69.3	10.8	55.7	959.2	668.9	137.4	12.9	1.000271
7000.0	597.5	67.3	10.3	58.7	946.8	667.3	133.2	13.7	1.000267
7500.0	583.5	65.3	9.7	61.0	934.4	665.8	130.1	13.2	1.000262
8000.0	569.6	63.0	9.0	63.2	922.1	664.3	131.1	10.4	1.000258
8500.0	555.9	60.6	8.6	67.4	910.0	662.7	134.9	8.9	1.000254
9000.0	542.4	58.4	8.4	72.9	898.2	661.1	140.2	8.8	1.000251
9500.0	529.1	56.1	8.1	76.4	886.5	659.4	138.3	9.4	1.000248
10000.0	516.0	53.7	7.7	83.8	875.0	657.8	133.8	10.3	1.000245
10500.0	503.1	51.3	7.3	89.6	862.2	656.6	124.2	10.8	1.000242
11000.0	490.3	48.9	6.7	94.1	852.0	654.5	115.5	11.2	1.000237
11500.0	477.7	46.3	5.7	93.4	841.0	652.7	105.4	11.2	1.000226
12000.0	465.3	43.7	-2.6	50.1	824.5	651.1	110.2	10.1	1.000238
12500.0	453.0	41.0	-1.2	60.5	812.7	651.8	123.7	9.0	1.000238
13000.0	441.0	38.3	-2.2	70.9	801.0	650.5	143.7	5.8	1.000248
13500.0	429.2	35.6	-4.8	49.6	784.4	650.4	177.5	4.4	1.000156
14000.0	417.5	32.9	-6.0	46.7	773.4	649.7	182.4	3.2	1.000191
14500.0	406.1	30.2	-5.9	49.8	761.1	648.9	184.5	3.1	1.000184
15000.0	394.9	27.5	-5.8	53.0	749.1	648.0	170.0	3.7	1.000187
15500.0	383.8	24.8	-7.4	50.5	738.2	646.0	152.3	6.0	1.000182
16000.0	372.9	22.1	-9.1	43.0	727.6	645.3	149.4	8.7	1.000179
16500.0	362.1	19.4	-10.9	44.1	716.0	644.2	151.2	11.7	1.000173
17000.0	351.5	16.7	-9.0	54.5	704.7	643.3	156.5	13.8	1.000173
17500.0	341.1	14.0	-11.0	49.7	693.5	642.3	161.0	15.4	1.000158
18000.0	330.6	11.3	-13.1	44.2	682.5	641.2	160.4	16.4	1.000154
18500.0	320.7	9.6	-15.4	38.8	671.6	640.2	157.4	17.3	1.000159
19000.0	310.3	7.9	-17.9	33.3	661.0	639.2	152.8	18.5	1.000155
19500.0	300.1	6.2	-15.8	43.4	650.7	638.0	151.4	21.1	1.000154
20000.0	290.4	4.5	-22.3	26.2	640.6	637.0	151.2	23.6	1.000148
20500.0	282.0	2.8	-26.3	15.8	630.7	635.5	152.6	25.7	1.000144
21000.0	272.7	1.1	-29.4	16.0	620.5	634.6	152.4	26.6	1.000141
21500.0	263.5	-0.6	-27.5	16.4	610.0	633.8	151.2	27.6	1.000139
22000.0	254.4	-2.3	-24.6	17.2	600.2	632.7	149.3	28.9	1.000135
22500.0	245.6	-4.0	-21.1	18.0	590.4	631.7	148.2	30.4	1.000134
23000.0	236.3	-5.7	-30.9	18.2	581.4	630.2	148.1	32.0	1.000132
23500.0	228.2	-7.0	-31.6	19.4	572.6	628.8	148.4	33.1	1.000130

STATION ALTITUDE 4051.77 FEET MSL

7 JULY 83

ASCENSION NO. 97

UPPER AIR DATA

18801P0397

IC-37

GEODETIC COORDINATES

32.40175 LAT DEG

106.31232 LON DEG

TABLE 7 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TV)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	419.7	-14.6	18.6	567.9	627.3	149.2	33.2	1.000128
24500.0	411.4	-15.2	18.7	555.4	625.8			1.000126
25000.0	403.2	-16.4	18.9	547.0	624.3			1.000124

STATION ALTITUDE 4031.77 FEET FSL
 7 JULY 82
 ASCENSION NO. 97

MANDATORY LEVELS
 1860190077
 LC-37

1030 MDT

97

TABLE 8

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5162.	23.3	11.7	48.	156.5	7.0
750.0	6907.	18.8	10.4	58.	133.9	13.7
700.0	8214.	14.0	8.6	70.	137.5	8.8
650.0	10310.	9.1	7.7	91.	123.0	10.9
600.0	12612.	5.6	-0.2	63.	127.4	7.5
550.0	14754.	3.2	-5.8	52.	176.6	3.4
500.0	17053.	-1.2	-9.2	54.	157.2	14.1
450.0	19527.	-5.4	-15.4	45.	151.3	21.3
400.0	22217.	-9.9	-29.0	18.	148.8	29.6
350.0	25159.	-16.9	-55.0	19.		

GEOMETRIC COORDINATES
38.40343 LAT DEG
104.77033 LON DEG

SIGNIFICANT LEVEL DATA
1280020741
WHITE SANDS

TABLE 9

STATION ALTITUDE 3089.00 FEET MSL
7 JULY 83
ASCENSION NO. 341 1100

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES CENTIGRADE	WET POINT DEGREES CENTIGRADE	
804.2	30.0	13.7	37.0
978.2	27.4	12.6	40.0
950.0	24.2	11.2	46.0
754.1	14.1	8.9	71.0
744.3	13.3	7.5	62.0
700.0	9.0	5.9	81.0
475.5	8.5	5.8	83.0
607.0	7.0	4.7	81.0
535.1	7.0	4.0	81.0
674.9	7.0	4.0	81.0
560.4	6.9	3.9	55.0
627.7	3.6	-1.0	57.0
615.1	3.0	-6	74.0
547.8	2.7	-12.4	31.0
501.8	-4	-3.4	64.0
545.3	-1.3	-9.5	50.0
512.3	-4.6	-7.6	62.0
500.0	-5.1	-11.3	57.0
458.2	-4.8	-16.3	41.0
405.3	-9.0	-27.4	15.0
400.0	-16.9	-30.0	15.0
		-36.7	16.0

GEODETIC COORDINATES
32.40043 LAT DEG
107.17333 LON DEG

UPPER AIR DATA
1960070741
WHITE SANDS
TABLE 10

STATION ALTITUDE 2059.00 FEET MSL
7 JULY 50 1100 MDT
ASCENSION NO. 341

CELESTRIE ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	WIND HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
1939.0	684.2	70.0	37.0	1002.2	680.6	130.0	1.9	1.000200
1900.0	583.9	69.7	37.2	1009.4	690.4	130.2	2.0	1.000200
1509.0	663.8	66.3	42.0	1004.2	676.3	135.2	2.1	1.000285
1500.0	653.7	64.6	45.2	992.7	674.4	137.4	4.7	1.000281
1500.0	839.0	63.1	48.7	950.5	572.6	138.6	6.0	1.000278
1500.0	824.3	61.6	52.4	968.2	570.9	141.6	7.4	1.000275
1500.0	809.9	60.1	56.1	956.1	609.2	149.7	8.6	1.000271
1500.0	795.7	58.5	59.8	944.2	667.5	144.9	10.3	1.000268
1500.0	781.8	57.1	63.5	932.5	665.8	136.4	11.7	1.000254
1500.0	763.1	55.5	67.2	921.0	664.0	130.3	11.9	1.000260
1500.0	754.6	54.2	70.9	909.7	662.2	131.5	12.2	1.000255
1500.0	741.1	53.0	74.4	897.5	660.8	130.2	10.9	1.000248
1500.0	727.6	51.7	72.8	885.3	659.3	126.5	9.5	1.000244
1500.0	714.7	50.5	76.6	873.3	657.8	120.5	8.4	1.000240
1500.0	701.3	49.2	80.5	861.6	656.3	120.1	9.2	1.000236
1500.0	689.0	48.0	86.7	849.6	654.8	119.4	9.2	1.000231
1500.0	676.4	47.0	87.6	838.0	653.3	118.7	9.7	1.000219
1500.0	664.1	46.0	89.0	823.2	653.1	118.8	9.1	1.000212
1500.0	651.6	45.0	91.7	810.8	652.0	119.4	8.0	1.000209
1500.0	639.8	44.7	93.3	799.4	650.5	131.7	5.9	1.000207
1500.0	628.0	43.5	94.8	788.2	649.1	157.0	4.2	1.000203
1500.0	616.4	42.3	96.5	776.1	648.0	156.2	4.7	1.000186
1500.0	593.6	41.4	98.4	761.8	647.9	170.1	4.3	1.000188
1500.0	582.5	40.4	99.1	748.5	647.6	164.0	4.1	1.000189
1500.0	571.6	39.5	99.6	737.2	646.3	161.5	4.7	1.000184
1500.0	560.9	38.4	99.6	726.2	645.1	161.1	5.7	1.000179
1500.0	550.4	37.4	99.6	715.1	644.0	157.2	8.5	1.000175
1500.0	539.9	36.4	99.6	707.0	643.4	155.7	11.2	1.000174
1500.0	529.7	35.4	99.6	691.8	642.4	154.7	12.7	1.000171
1500.0	519.6	34.4	99.6	681.3	639.7	154.2	13.7	1.000167
1500.0	509.7	33.4	99.6	671.0	638.8	153.7	14.1	1.000163
1500.0	500.0	32.4	99.6	660.4	638.2	153.2	15.4	1.000159
1500.0	490.4	31.4	99.6	649.0	638.2	153.6	17.4	1.000154
1500.0	481.0	30.4	99.6	636.4	638.3	153.1	20.2	1.000145
1500.0	471.7	29.4	99.6	626.4	637.2	152.5	22.8	1.000143
1500.0	462.6	28.4	99.6	617.4	635.6	152.3	24.9	1.000140
1500.0	453.5	27.4	99.6	608.3	634.1	152.5	25.8	1.000136
1500.0	444.5	26.4	99.6	599.0	632.7	152.0	26.6	1.000136
1500.0	435.3	25.4	99.6	589.8	631.3	150.4	27.5	1.000134
1500.0	426.2	24.4	99.6	580.8	629.8	140.2	29.0	1.000131

STATION ALTITUDE 3929.00 FEET MSL
7 JULY 83 1100 MDT
ASCENSION NO. 341

UPPER AIR DATA
190000Z0341
WHITE SANDS

GEODETTIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 10 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
23500.0	427.2	-13.0	-33.8	15.6	571.9	628.4		149.3	30.7	1.000129
24000.0	418.0	-14.4	-34.6	15.7	567.2	627.0		150.4	32.6	1.000127
24500.0	410.5	-15.4	-35.5	15.6	554.6	625.6				1.000125
25000.0	402.4	-16.5	-36.4	15.0	546.2	624.1				1.000123

STATION: ALTITUDE 3729.00 FEET FSL
 7 JULY 82
 ASCENSION NO. 341

MANDATORY LEVELS
 180020341
 WHITE SANDS

TABLE 11

GEODETIC COORDINATES
 32.40043 LAT DEG
 136.37033 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
957.0	3129.	24.2	11.0	46.	137.7	5.0
900.0	2957.	19.1	10.8	59.	147.2	9.9
750.0	2663.	13.8	8.3	70.	131.2	11.9
700.0	16559.	9.0	5.0	81.	120.1	8.6
657.0	12566.	5.8	-8	63.	119.6	7.8
600.0	14599.	2.7	-4.3	50.	167.6	4.2
550.0	16995.	-1.1	-8.1	59.	155.7	11.2
500.0	19472.	-5.1	-16.3	41.	157.7	17.3
450.0	21609.	-10.0	-31.5	15.	151.4	25.9
400.0	25110.	-16.9	-36.7	16.		

GEODETIC COORDINATES
37.40743 LAT DEG
106.37933 LON DEG

SIGNIFICANT LEVEL DATA
1950020342
WHITE SANDS

TABLE 12

STATION ALTITUDE 39,990.0 FEET MSL
7 JULY 83 1300 MDT
ASCENSION NO. 342

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
MILLIBARS	MSL FEET			
863.4	7994.0	31.9	13.2	32.0
872.6	4350.0	28.2	11.3	35.0
950.0	5111.9	25.7	11.1	40.0
909.2	6522.3	20.6	10.4	52.0
744.5	8456.2	14.5	7.3	62.0
700.0	10558.2	10.1	6.4	76.0
578.3	11407.9	8.1	5.6	84.0
600.3	12157.1	6.1	5.2	94.0
630.4	13402.2	3.2	2.5	95.0
606.2	14444.1	1.2	-0.7	97.0
547.3	16335.9	.0	-3.0	75.0
579.5	15637.0	1.2	-4.8	64.0
535.8	17645.8	-3.8	-8.6	64.0
528.4	15056.7	-3.5	-6.2	70.0
500.0	18472.4	-4.4	-13.5	44.0
511.7	19989.7	-5.4	-17.0	37.0
500.0	17484.3	-5.3	-24.0	23.0
457.7	23152.0	-12.8	-31.5	19.0
400.0	25112.1	-17.6	-34.5	21.0

STATION ALTITUDE 3959.00 FEET MSL
7 JULY 83
ASCENSION NO. 342

UPPER AIR DATA
190000Z42
WHITE SANDS

1100 MDT

GEODETIC COORDINATES
32.40043 LAT DEG
104.77033 LONG DEG

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) DEGREES	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
5930.0	883.4	71.9	13.2	32.0	1002.3	682.6	130.0	5.1	1.000285
4000.0	893.1	71.3	13.1	32.1	1002.3	682.5	130.0	5.1	1.000285
4500.0	885.1	72.7	11.3	35.0	999.3	677.7	131.1	5.5	1.000279
5000.0	853.3	76.1	11.1	39.3	987.5	675.9	132.1	6.0	1.000270
5500.0	818.6	74.3	11.0	43.3	975.3	673.9	132.0	6.4	1.000274
6000.0	824.1	72.2	10.8	47.6	955.3	671.8	133.6	6.5	1.000271
6500.0	809.8	70.7	10.4	51.8	954.5	669.3	134.6	7.3	1.000268
7000.0	795.6	19.4	9.8	54.0	942.0	668.2	140.0	7.6	1.000264
7500.0	781.0	16.1	9.2	56.2	929.7	666.7	150.4	6.5	1.000259
8000.0	767.3	16.3	3.5	58.3	917.6	665.1	150.5	5.8	1.000255
8500.0	754.3	15.2	7.8	60.4	905.6	663.6	140.0	6.0	1.000250
9000.0	740.9	14.2	7.3	63.3	893.7	662.1	128.5	6.8	1.000246
9500.0	727.6	12.9	7.1	63.0	881.6	660.6	127.7	6.2	1.000243
10000.0	714.0	11.6	6.8	72.7	859.7	659.1	128.4	5.7	1.000240
10500.0	701.7	10.3	6.5	77.4	839.2	657.5	133.6	5.8	1.000237
11000.0	689.0	9.1	6.0	81.1	846.1	656.2	136.7	5.9	1.000233
11500.0	676.5	7.9	5.5	85.2	834.4	654.7	136.3	5.8	1.000229
12000.0	664.1	6.3	5.3	91.9	823.1	653.2	135.0	5.7	1.000227
12500.0	651.9	5.3	4.5	94.3	811.6	651.7	130.9	5.3	1.000222
13000.0	639.9	4.1	3.4	94.7	800.2	650.2	127.9	5.0	1.000217
13500.0	626.1	3.0	2.2	94.2	788.9	648.8	127.6	4.8	1.000211
14000.0	616.4	2.1	.7	96.4	777.2	647.5	126.7	4.6	1.000205
14500.0	604.9	1.2	-1.0	85.3	765.5	646.4	124.1	4.2	1.000199
15000.0	593.6	1.0	-3.4	72.7	752.1	645.0	132.2	4.1	1.000192
15500.0	582.2	1.1	-4.5	63.9	737.7	646.1	144.2	4.7	1.000186
16000.0	571.5	.3	-5.5	64.9	726.2	645.1	137.0	6.8	1.000182
16500.0	560.5	-.9	-6.5	66.1	715.8	643.6	154.7	P.8	1.000179
17000.0	550.2	-2.2	-7.4	67.4	705.6	642.1	157.0	10.7	1.000175
17500.0	539.8	-3.4	-8.4	59.6	695.5	640.5	157.6	11.8	1.000172
18000.0	529.5	-3.5	-8.2	57.9	682.5	640.4	158.3	12.5	1.000169
18500.0	519.4	-4.5	-13.7	46.2	672.5	639.1	156.2	13.5	1.000161
19000.0	509.5	-5.6	-18.8	34.4	662.4	637.6	153.2	14.6	1.000155
19500.0	499.7	-9.3	-24.0	23.0	652.0	636.6	149.8	17.2	1.000150
20000.0	490.6	-7.2	-25.0	22.4	641.4	635.5	147.8	20.0	1.000147
20500.0	480.4	-8.1	-26.0	21.9	631.1	634.4	148.4	23.0	1.000144
21000.0	471.1	-9.0	-27.1	21.4	620.9	633.4	140.1	25.7	1.000142
21500.0	461.9	-9.9	-28.1	20.8	610.9	632.3	150.1	26.7	1.000139
22000.0	452.9	-10.6	-29.1	20.3	601.0	631.2	150.0	27.7	1.000137
22500.0	444.1	-11.0	-29.2	19.7	591.3	630.1	151.7	28.4	1.000134
23000.0	435.4	-12.5	-31.2	19.2	581.7	629.1	150.7	29.4	1.000132

STATION ALTITUDE 5925.00 FEET MSL
 7 JULY 83
 ASCENSION NO. 342

UPPER AIR DATA
 180020342
 WHITE SANDS

GEODETIC COORDINATES
 32.50043 LAT DEG
 104.57033 LON DEG

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	WIND POINT CENTIGRADE			KNOTS	FT/SEC	DIRECTION DEGREES (TN)	SPEED KNOTS	
23500.0	425.3	-13.6	-32.0	19.3	572.7	627.7		150.1	30.1	1.000130
24000.0	418.3	-14.4	-32.8	19.9	564.3	626.2		150.2	30.4	1.000128
24500.0	410.0	-16.1	-33.6	20.4	555.4	624.7				1.000126
25000.0	401.9	-17.3	-34.4	20.9	547.0	623.2				1.000124

STATION ALTITUDE 505.70 FEET MSL
 7 JULY 83 1100 MDT
 ASCENSION NO. 342

MANDATORY LEVELS
 1P00020342
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 136.37033 LON DEG

TABLE 14

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT		DIRECTION DEGREES(TN)	SPEED KNOTS
950.0	5109.	25.7	11.1	40.	132.7	6.1
907.0	6441.	19.8	10.0	53.	138.3	7.5
750.0	8653.	15.0	7.4	61.	136.1	6.2
700.0	10558.	10.1	6.4	78.	134.0	5.8
650.0	12567.	5.1	4.3	94.	130.2	5.2
600.0	14699.	1.0	-2.7	79.	127.2	4.2
550.0	16990.	-2.2	-7.4	67.	157.0	10.8
500.0	19457.	-6.3	-24.0	23.	150.0	17.1
450.0	22136.	-11.0	-29.5	20.	151.2	27.9
400.0	25069.	-17.6	-34.0	21.		

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